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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/595,494	10/23/2006	Frank Dietsche	12810-00237-US1	1545
23416 7590 09/02/2011 CONNOLLY BOVE LODGE & HUTZ, LLP P O BOX 2207 WILMINGTON, DE 19899				
EXAMINER				
JACKSON, MONIQUE R				
ART UNIT		PAPER NUMBER		
1787				
MAIL DATE		DELIVERY MODE		
09/02/2011		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary**Application No.**

10/595,494

Applicant(s)

DIETSCHE ET AL.

Examiner

MONIQUE JACKSON

Art Unit

1787

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 May 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 1-7, 10-17 and 25-27 is/are pending in the application.
- 5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 1-7, 10-17 and 25-27 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-CB00)
Paper No(s) Mail Date 3/23/11
- 4) ☐ Interview Summary (PTO-413)
Paper No(s) Mail Date ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/31/11 has been entered.
2. Claims 8-9 and 18-24 have been canceled. Claims 1-7, 10-17 and 25-27 are pending in the application. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

3. Claims 1-7, 10-17 and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tada et al (USPN 6,514,357) in view of Martorano et al for the reasons recited in the prior office action and restated below, wherein the Examiner further notes that Tada et al teaches example resins wherein the water-soluble resin is a copolymer formed from (meth)acrylic acid within the claimed range and a second acid monomer having a content within the claimed 5-40wt%, namely acrylic acid/maleic acid 90/10, acrylic acid/itaconic acid 70/30, methacrylic acid/itaconic acid 60/40, reading upon the added limitation of 5 to 40% by weight of the comonomer. Additionally, the Examiner notes that one having ordinary skill in the art at the time of the invention would have been motivated to utilize the (meth)acrylic acid monomer in an amount as taught by Tada et al, specifically at least 40wt%, or in amounts similar to those utilized in the examples taught by Tada et al, with the other comonomers taught by Tada et al

which read upon or render obvious the claimed comonomers including those of new Claims 25-27, utilizing routine experimentation to determine the optimum content of each comonomer to provide the desired water solubility and copolymer properties for a particular end use wherein the Examiner notes that the presence of the acid groups on the copolymer would directly affect the pH of the composition by their very nature, and hence the pH of the composition is "controlled" by the acid copolymer as well as the additional acid incorporated by Tada et al, wherein the instant invention also incorporates additional acid as recited in instant claim 3 would by their nature would also affect the pH of the formulation.

4. Tada et al also teach that the acid contained in the composition functions to maintain the composition in an acidic state with a pH of preferably 1.0 to 3.0 (Col. 6, lines 14-18.) Tada et al further teach that resulting organic resin layer exhibits conductivity and is dense thereby contributing to improvements with respect to corrosion resistance over a conventional organic resin layer due to the increased density of the layer, and that when the content of acid is increased, the number of crosslink points is increased, improving the film density and hence corrosion resistance (Col. 4, lines 22-34; Col. 5, lines 21-29; Col. 7, lines 17-30.) Hence, though Tada et al refer to pseudo-crosslinking taking place within the composition at various pH values, one having ordinary skill in the art at the time of the invention would have been motivated to utilize a multi-functional epoxy compound as the "coupling agent" or "crosslinker", given that Tada et al teaches the use of compounds having more than one functional group (hence 2 or more functional groups) such as epoxy groups, which would naturally form permanent crosslinks in the coating, and possibly further increasing the density of the coating.

5. As discussed in the prior office action, Tada et al teach a chromium-free, corrosion resistant composition for metal surface treatment and surface treated metallic material wherein the composition comprises an aluminum ion, a magnesium ion, a manganese ion, a water-soluble organic resin, an acid, water, and optionally a coupling agent having at least one reactive group such as an epoxy group (Abstract; Col. 3, lines 58-60.) Tada et al teach that the water-soluble organic resin is preferably a polymer or copolymers comprising at least 40% by weight or more of carboxylic monomers such as (meth)acrylic acid, cronic acid, maleic acid, itaconic acid, with acrylic acid and methacrylic acid being preferable; with example water-soluble copolymers comprising acrylic acid and another acid monomer other than the acrylic acid (Col. 4, line 34 - Col. 5, line 14; Examples.) Tada et al teach that the acid is preferably phosphoric acid, acetic acid, nitric acid or hydrofluoric acid (Col. 3, lines 44-49.) Tada et al teach that the metal substrate is preferably a zinc-type plated steel sheet such as electrolytic or hot-dip galvanized steel (Col. 3, lines 60-64; Col. 7, lines 58-Col. 8, line 4.) Tada et al teach that the coating can be applied by roll coating, spray coating, brush coating, dip coating, or curtain flow coating, and then heated and dried to cure the coating to form a film having a thickness of 0.1 to 2.0 microns (Col. 8, lines 5-20.) Tada et al teach that the corrosion resistance of the coating is improved by increased pseudo-crosslinking and also teach that the coating can comprising a coupling agent having **at least one functional group such as an epoxy group**, hence providing a suggestion to utilize a coupling agent with two or more reactive functional or epoxy groups, but do not specifically teach the instantly claimed epoxy crosslinking agent. However, it would have been obvious to one having ordinary skill in the art at the time of the invention to utilize a coupling or crosslinking agent having more than one epoxy group, or known epoxy crosslinking agents or

known functionally equivalent crosslinking agents in the art wherein the claimed crosslinking agents are known water-soluble crosslinking agents utilized in similar metal coating compositions as taught by Martorano et al, including the oxirane and azirane crosslinking agents as claimed, and hence would have been obvious to one having ordinary skill in the art at the time of the invention given the predictable results and reasonable expectation of success, wherein one skilled in the art would have been motivated to utilize routine experimentation to determine the amount or ratio of crosslinking agent to acid copolymer to provide the desired crosslinking properties for a particular end use of the coated steel substrate, wherein it is well established in the coating art that crosslink density is a result-effective variable affecting the mechanical and physical properties of the coating layer including density, hardness and flexibility. With respect to the contact time as recited in Claim 17, one having ordinary skill in the art at the time of the invention would have been motivated to determine the optimum contact time to provide a coating having the desired thickness for a particular end use wherein given that Tada et al teach a coating thickness as claimed, the claimed contact times would have been obvious.

Response to Arguments

6. Applicant's arguments filed 5/31/11 have been fully considered but they are not persuasive. The Applicant argues that Tada et al teaches a coupling agent and not a crosslinking agent wherein Tada et al provides an example coupling agent that contains only one epoxide group. However, as discussed above, Tada et al clearly teaches that the coupling agent may comprise more than one of the functional groups, e.g. epoxy groups, and hence a coupling agent comprising more than one epoxy groups would read upon the claimed crosslinking agent. With regards to the Applicant's arguments that Tada provides a solution for the problem discussed and

recites that sufficient corrosion resistance can be achieved, the Examiner notes that such teachings would not lead a skilled artisan away from further improvements as suggested by the teachings of Tada in view of Martorano. With regards to Applicant's arguments over Martorano, the Examiner notes that Martorano was not cited to teach an acid mixture but was cited to support the Examiner's position that the oxirane and azirane crosslinking agents as claimed are known water-soluble crosslinking agents utilized in similar metal coating compositions, whether acidic, basic, or neutral pH, and one having ordinary skill in the art at the time of the invention would have been motivated to utilize these known crosslinking agents given the predictable results and reasonable expectation of success. Therefore, the Examiner maintains her position that the claimed invention would have been obvious over the teachings of Tada et al in view of Martorano for the reasons discussed above.

7. All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MONIQUE JACKSON whose telephone number is (571)272-1508. The examiner can normally be reached on Mondays-Thursdays, 10:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on 571-272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Monique R Jackson/
Primary Examiner, Art Unit 1787
August 29, 2011